

REMARKS

Applicant has amended claims 1, 5 and 8, and added new claims 9-10. Claims 1, 5 and 8-10 are currently pending in this application.

In the Office Action, the Examining Attorney indicated that Fig. 15 should be designated by a legend such as “prior art”. On May 30, 2003, Applicant submitted a Request for Approval of Drawing Changes which added the phrase “prior art” to FIG. 15. Applicant hereby respectfully requests that the Request be entered. If the Request cannot be located, Applicant respectfully requests the Examiner to contact him so that another version can be submitted in the next response.

The Examiner objected to claims 1 and 8 for various informal matters. Applicant has amended claims 1 and 8 to address all of the Examiner’s concerns.

The Examiner rejected claims 1, 5 and 8 under 35 U.S.C. Section 103(a) under Mita (US 5045674) in view of Muto (US 5478996). Applicant respectfully traverses the rejection.

According to the prior art as disclosed in FIG. 15, a flexible connection cable 107 such as a flexible printed cable (“FPC”) is used to connect the contacts 104 of a contacts block 105 to an IC card control circuit board (not illustrated) where the transmission of data is controlled. As the data transmission speed increases, however, the long cable distance between the IC card 102 and the IC card control circuit board starts to become problematic. When an FPC or a lead is used, the mechanism is vulnerable to noise caused between the lines (cross-talk), disturbance, etc. When the signal lines of the connection cable 107 are wired in parallel over a long distance, the cross-talk occurs as an interference between the signals at the peaks or valleys of the signals, causing errors in operation. This is particularly serious when the data transmission rate of the IC is very high.

By contrast, the present invention according to claim 1 discloses a novel contacts block module that solves the above stated problems. In accordance with the invention, a IC card control circuit board (see 7a in FIG. 1) is mounted to the contacts block 4 so as to eliminate the long cable between the IC card control circuit board and the IC contact card 2 as was previously necessary. According to the invention of claim 1, the IC card control circuit board **communicates** with the IC contact card through the contact terminals and serves as a signal transmitter that controls transmission of signals from the IC card 2 to a CPU housed in a main assembly located away from the contacts module (emphasis added) (see present specification at page 4, line 33 – page 5, line 1). The word “communicate” as used herein means there is a **two way transmission of data** between the IC contact card and the control circuit board (See specification at page 7, lines 30-34).

This important feature is recited in claim 1 as “said IC card control circuit board being operable

, to communicate with said IC card through said contacts of said contacts block" (emphasis added).

Another important feature is that the contacts block with the mounted control circuit board is a module and can be replaced as a modular unit without any change to the main assembly of the card reader unit. This can be very advantageous when card technology with respect to transmission of data, data encoding or contacts spacing changes and hardware changes are required to accommodate the new card. In the present invention, a single module housing the contacts block and the control circuit board can be changed very easily without having to take apart the main assembly to change the circuit board in order to accommodate new card technology.

This feature is recited in claim 1 as "said contacts block being replaceable as a modular unit". None of the cited references, either individually or in combination, teach or suggest these two novel features.

The Examiner cited Muto as teaching a control circuit board mounted to the contacts block. Applicant respectfully disagrees. As can be clearly seen in FIG. 1 and 3, the circuit board 40 of Muto at best assists in fraud detection, but it **does not communicate** with the IC card as required by claim 1. In fact, it does not communicate at all and it basically passively allows data to pass between the IC card and a CPU 50 located elsewhere through a data cable (not labeled). See the contacts 36 (apparently constituting 8 bits of parallel data) of the IC card that basically are passed off to the remotely located CPU 50 through a data cable connected to terminal 43b. There is no communication and this is clearly prior art as discussed in the background section of the present specification. Moreover, the communication is actually controlled not by the circuit board 40, but by the remotely located CPU 50 through remotely activated relay 44 which is strictly under the control of the remotely located CPU.

More specifically, the circuit board 40 includes three components: reception circuit 45, coil 44a and sensor 38. The reception circuit 45 simply monitors a selected frequency being outputted from terminal 36' (see col. 6, lines 8-15). That is not communication. The coil 44a simply provides power to the relay 44 being controlled by the remotely located CPU (see col. 6, lines 23-26). The sensor 38 does nothing more than to sense the insertion of a card (see col. 5, lines 55-61). That is not communication either.

Since Muto does not teach or suggest a control circuit board that is capable of communicating with the IC contact card, a combination of Muto with Mita also does not teach or suggest the invention claimed in claim 1.

Claim 5 has been similarly amended. Thus, Applicant submits that claim 5 is also patentable.

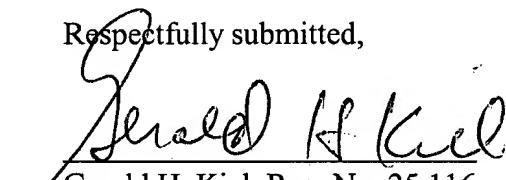
New claims 9-10 have been added. Claim 9 recites the novel features of "the contacts block

, module being replaceable as a modular unit" and "a control circuit board mounted to the contacts block module . . . the control circuit board being operable to communicate with the IC contact card through the contacts". Claim 9 further recites "the control circuit board . . . serving as a signal transmitter from the IC contact card to a processor housed in a main assembly of the IC contact card reader". None of the references teach or suggest such a novel combination as claimed in claim 9.

Claims 8 and 10 are also patentable by virtue of their dependency from respective parent claims.

Based upon the above amendments and remarks, applicants respectfully request reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with applicants' attorney would expedite prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,



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